

## SHORT COMMUNICATION

## New or Noteworthy Plant Collections from Myanmar (7): Fourteen Additional Species of Orchidaceae

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As part of an ongoing inventory toward the production of a flora of Mt. Popa, central Myanmar, the Makino Botanical Garden and Botanical Gardens, the University of Tokyo, conducted botanical expeditions in collaboration with the Nature and Wildlife Conservation Division of the Forest Department, Union of Myanmar Ministry of Forestry. As a result of the study of the Orchidaceae on Mt. Popa, fourteen species belonging to twelve genera; *Acampe joiceyana* (J. J. Sm.) Seidenf., *Armadorum siamense* Schltr., *Bulbophyllum reclusum* Seidenf., *Chiloschista usneoides* (D. Don) Lindl., *Cleisomeria pilosulum* (Gagnep.) Seidenf. & Garay, *Cymbidium ensifolium* (L.) Sw., *Epipogium roseum* (D. Don) Lindl., *Eria globulifera* Seidenf., *Dendrobium dantaniense* Guillaumin, *Geodorum eulophioides* Schltr., *Habenaria erichmichellii* Christenson, *Habenaria limprichtii* Schltr., *Habenaria viridiflora* (Rottl. ex Sw.) Lindl., and *Luisia macrotis* Rehb.f., are newly recorded from Myanmar.

Key words: inventory, Mt. Popa, Myanmar, new records, Orchidaceae

To produce a flora of Mt. Popa, Myanmar, several expeditions to inventory the plants of Popa Mountain Park and surrounding areas have been conducted (Tanaka 2005, 2010). A preliminary checklist of the flowering plants of Mt. Popa, except Orchidaceae, has already been published (Tanaka *et al.* 2006). Since 2005 we have carried out additional expeditions in both the dry and wet seasons to Mt. Popa to investigate the orchids. One set of voucher specimens has been deposited at the Environmental Education Center, Popa Mountain Park. Other vouchers, indicated for each collection, are at MBK, TI and TNS.

Mt. Popa (20°56'N, 95°12'E), at 1,518 m altitude, is a topographically isolated, extinct volcano that stands within the dry zone lowland savannah in Mandalay Division, central Myanmar

(Fig. 1). Yin Yin Kyi (1992) reported on the vegetation of Mt. Popa and later (Yin Yin Kyi 1997) enumerated 221 vascular plant species from the mountain, but did not record any orchids. Although an updated checklist of the gymnosperms and flowering plants of Myanmar has been published (Kress *et al.* 2003), no modern critical floristic surveys have been conducted in Myanmar. The orchids of Myanmar continue to remain among the most poorly known plant groups in southeastern Asia (Ormerod & Kumar 2003).

Among the 105 species of both of dried and alcohol preserved specimens of orchids we collected on Mt. Popa, 14 species belonging to twelve genera were not previously known from Myanmar and are reported here: *Acampe joiceyana* (J. J. Sm.) Seidenf., *Armadorum siamense* Schltr., *Bulbophyllum reclusum* Seidenf., *Chiloschista usneoides* (D. Don) Lindl., *Cleisomeria pi-*

(Continued from J. Jap. Bot. 85: 199–212, 2010)

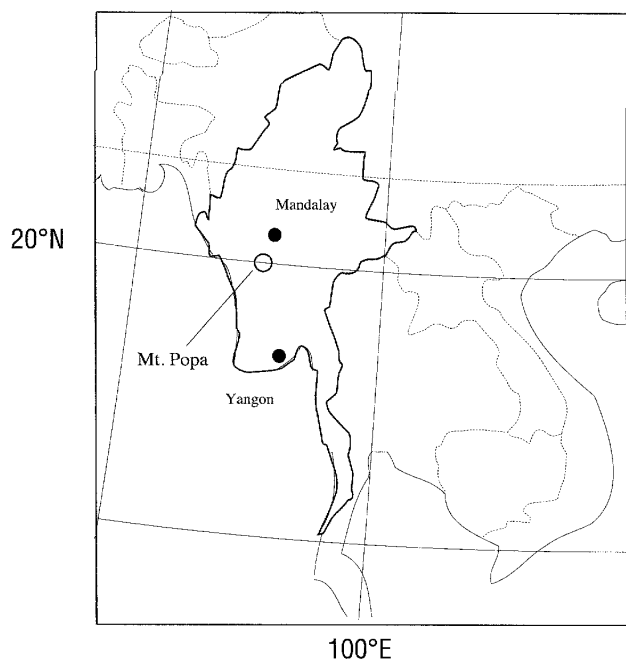


FIG. 1. The location of Mt. Popa. Mt. Popa is located in central dry zone of Myanmar.

*losulum* (Gagnep.) Seidenf. & Garay, *Cymbidium ensifolium* (L.) Sw., *Epipogium roseum* (D. Don) Lindl., *Eria globulifera* Seidenf., *Dendrobium dantaniense* Guillaumin, *Geodorum eulophioides* Schltr., *Habenaria erichmichelii* Christenson, *Habenaria limprichtii* Schltr., *Habenaria viridiflora* (Rottl. ex Sw.) Lindl., and *Luisia macrotis* Rchb.f.

**1. *Acampe joiceyana*** (J. J. Sm.) Seidenf., Nord. J. Bot. 22(6): 532 (2002).

*Trichoglottis joiceyana* J. J. Sm., Repert. Spec. Nov. Regni Veg. 26: 166 (1929).

*Acampe thailandica* Seidenf., Contrib. orchid fl. Thail. XIII: 49, fig. 11 (1997).

*Voucher specimen.* Western slope of Mt. Popa, 1200–1500 m alt., 30 March 2006, *Khin Myo Htwe* 102 (spirit collection—MBK, TNS).

*Distribution.* Myanmar, Thailand, Vietnam.

*Note.* Although Seidenfaden (1997) described *Acampe thailandica*, he later recognized it to be conspecific with *Trichoglottis joiceyana* J. J. Sm. (Seidenfaden 2002), which he transferred to *Acampe* as *A. joiceyana*. *Acampe thailandica* has been reported from Thailand and Vietnam (Seidenfaden 2002).

**2. *Armadorum siamense*** Schltr. in Orchis 6: 67 (1912). —Fig. 2A

*Voucher specimen.* Mt. Popa, 10 May 2006, *Khin Myo Htwe* 108 (spirit collection—MBK, TNS).

*Distribution.* Myanmar, Thailand, Vietnam.

*Note.* Until now, the genus *Armadorum* was known only from Thailand and Vietnam (Seidenfaden 2002). Our study revealed *Armadorum siamense* to also occur in central Myanmar, the western limit of its distribution.

**3. *Bulbophyllum reclusum*** Seidenf., Opera Bot. 124: 47 (1995). —Fig. 2B

*Voucher specimens.* Mt. Popa, 24 February 2006, *Khin Myo Htwe* 53 (spirit collection—MBK, TNS); Mt. Popa, 15 February 2006, *Khin Myo Htwe* 25 (spirit collection—MBK, TNS).

*Distribution.* Myanmar, Thailand.

*Note.* *Bulbophyllum reclusum* was previously known only from the type locality in Thailand. The Myanmar station is its western limit of distribution.

**4. *Chiloschista usneoides*** (D. Don) Lindl., Bot. Reg. 18: t. 1522 (1832).

*Voucher specimens:* Southwestern slope of Mt. Popa, alt. 1400 m, 2 June 2006, *Tsujita & al.* 036178 (spirit collection—TNS); Mt. Popa, 13 March 2006, *Khin Myo Htwe* 035053 (MBK).

*Distribution.* Bhutan, India, Myanmar, Nepal.

*Note.* *Chiloschista usneoides* is a so-called Himalayan floristic element. Our study revealed it to also occur in central Myanmar, the southern limit of its distribution.

**5. *Cleisomeria pilosulum*** (Gagnep.) Seidenf. & Garay, Bot. Tidsskr. 67: 120 (1972).

*Voucher specimen.* Mt. Popa, *Khin Myo Htwe* 25 & 39 (spirit collection—TNS).

*Distribution.* Cambodia, Laos, Myanmar, Thailand.

*Note.* *Cleisomeria pilosulum* is apparently an Indochinese species, but it has not been recorded from Myanmar, perhaps due to undercollection of the flora.

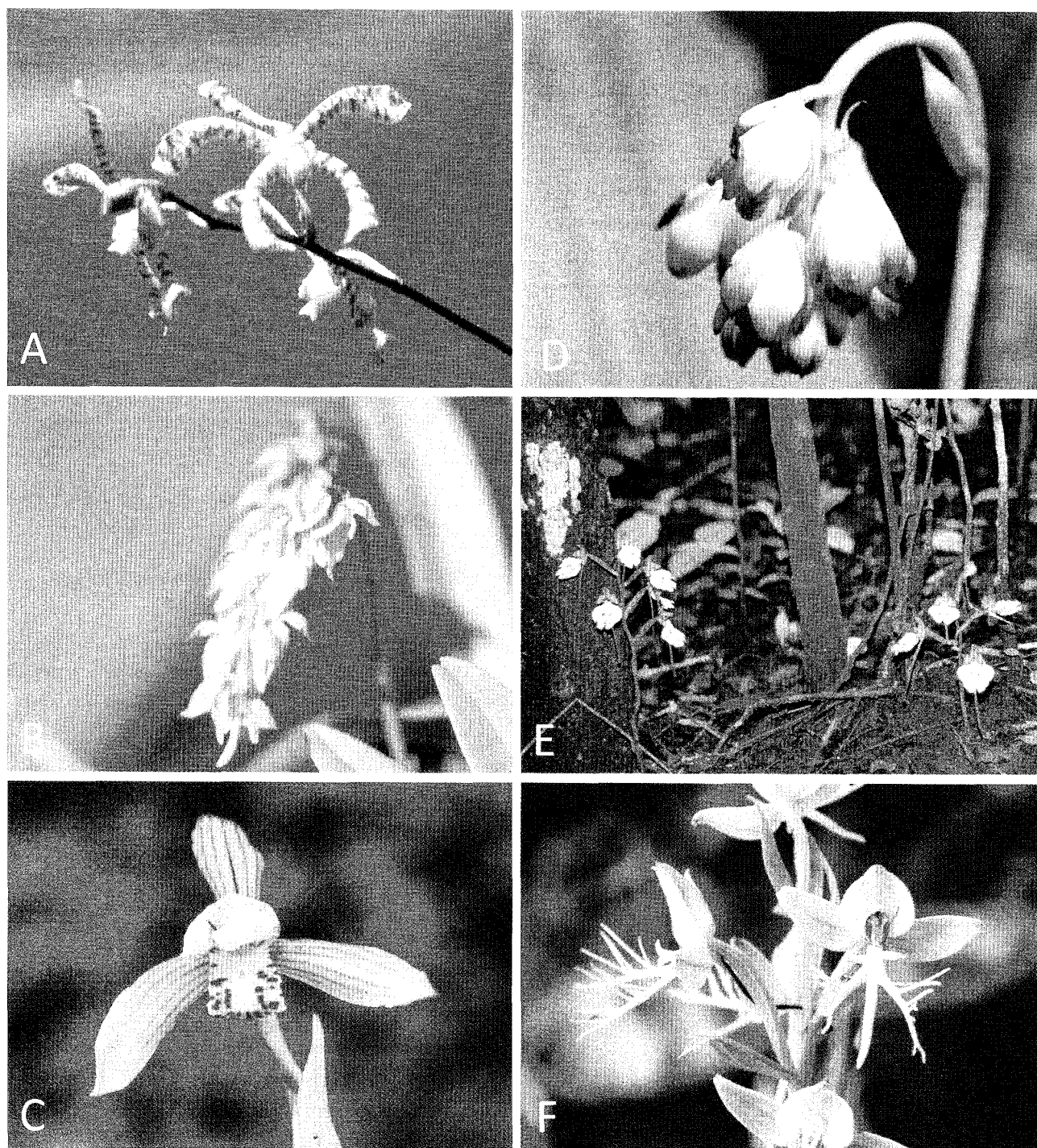


FIG. 2. A: *Armodorum siamense* Schltr. B: *Bulbophyllum reclusum* Seidenf. C: *Cymbidium ensifolium* (L.) Sw. subsp. *ensifolium*. Habitat of east side of Mt. Popa. D: *Geodorum eulophioides* Schltr. E: *Habenaria erichmichelii* Christenson. F: *Habenaria limprichtii* Schltr.

**6. *Cymbidium ensifolium* (L.) Sw. subsp. *ensifolium*,** Nova Acta Regiae Soc. Sci. Upsal. 6: 77, t. 5, fig. 3b (1799). —Fig. 2C

*Voucher specimens.* Mt. Popa, *Khin Myo Htwe 118* (spirit collection–TNS); along the trail to northeastern ridge of Mt. Popa, 3 June 2005, *Tanaka & al. 036213*

(MBK); near Taung Baw village, 3 June 2006, *Tsujita & al. 036209 & 036214* (spirit collection–TNS).

*Distribution.* Cambodia, China, India, Indonesia, Japan, Laos, Malaysia, Papua New Guinea, Philippines, Sri Lanka, Taiwan, Thailand, Vietnam.

**7. *Dendrobium dantaniense*** Guillaumin in Bull. Mus. Natl. Hist. Nat., II, 28: 547 (1957).

*Voucher specimens.* Mt. Popa, 1 June 2006, *Tanaka & al.* 036154 (MBK); southern slope of Mt. Popa, 11 July 2005, *Khin Myo Htwe* 53 & 54 (spirit collection–TNS).

*Distribution.* Myanmar, Thailand, Vietnam.

*Note.* *Dendrobium dantaniense* has been thus far recorded only from Thailand and Vietnam (Seidenfaden 1985). It, too, is at its western limit of distribution in Myanmar.

**8. *Epipogium roseum*** (D. Don) Lindl., J. Proc. Linn. Soc., Bot. 1: 177 (1857).

*Voucher specimens.* MYANMAR. **Mandalay Division.** only photographic record from Mt. Popa. **Chin State.** ca. 1 mile walk dawn from Kampetlet, Natma Taung (Mt. Victoria) National Park, alt. 1268 m, 21°11' 22.9"N, 94°03'31.1"E, 27 May 2007, *N. Kuroiwa & al.* 051335 (MBK).

*Distribution.* China, India, Indonesia, Japan, Laos, Malaysia, Nepal, Papua New Guinea, Philippines, Sri Lanka, Thailand, Vietnam; tropical Africa, Pacific islands.

*Note.* *Epipogium roseum* is widely distributed from India eastward to Japan, southeastward to the Pacific islands, and is also on the African continent. Myanmar was a gap in its distribution between India, Thailand, Vietnam and Malaysia. No voucher specimens have been collected on Mt. Popa; the identification is based on a photograph. There is, however, a specimen of *E. roseum* from Kampetlet, Chin State (*N. Kuroiwa & al.* 051335 in MBK). This saprophyte is not only on Mt. Popa, but apparently in other regions of Myanmar as well.

**9. *Eria globulifera*** Seidenf. in Opera Bot. 62: 125 (1982).

*Voucher specimen.* Southern side of Mt. Popa, 19 August 2005, *Khin Myo Htwe* 59 (spirit collection–TNS).

*Distribution.* India, Laos, Myanmar, Thailand, Vietnam.

**10. *Geodorum eulophioides*** Schltr., Repert. Spec. Nov. Regni Veg. 17: 70 (1921). —Fig. 2D

*Voucher specimens:* Mt. Popa, 13 July 2005, *Khin Myo Htwe* 55 (spirit collection–TNS); north side of the crater, 3 June 2006, *Tsujita* 036208 (spirit collection–TNS).

*Distribution.* China, Myanmar.

*Note.* *Geodorum eulophioides* is newly recorded from Myanmar. The illustration of *G. purpureum* in Vaddhanaphuti (2005) closely resembles *G. eulophioides*. If the two are conspecific, it is likely to be more widely distributed in Indochina.

**11. *Habenaria erichmichelii*** Christenson in Orchids (West Palm Beach) 72(2): 136 (2003). —Fig. 2E

*Voucher specimens:* near Mon-kon village, 15 September 2002, *Khin Myo Htwe* 024088A (MBK, TI).

*Distribution.* Myanmar (probably also in Thailand).

*Habenaria erichmichelii* was described without precise locality. The type material (K), originally from Thailand, flowered in cultivation at Hoosier Orchid Company in July 2002. Our study reports it is also in Myanmar.

**12. *Habenaria limprichtii*** Schltr. in Spec. Nov. Regni Veg. Beih. 4: 50 (1919). —Fig. 2F

*Voucher specimens:* Mt. Popa, 25 September 2005, *Khin Myo Htwe* 65 (spirit collection–TNS).

*Distribution.* China, Myanmar, Thailand, Vietnam.

*Note.* *Habenaria limprichtii* is probably widely distributed from southern China through the Indochinese region. We also collected *H. limprichtii* on Mt. Victoria, Chin State, western Myanmar (*Tanaka & Yukawa* 081279 in MBK).

**13. *Habenaria viridiflora*** (Rottl. ex Sw.) Lindl., Gen. Sp. Orchid. Pl.: 319 (1835).

*Voucher.* Known only from a photograph taken on Mt. Popa.

*Distribution.* Bangladesh, Cambodia, China, India, Laos, Sri Lanka, Thailand, Vietnam.

*Note.* The identification of *Habenaria viridiflora* is from a photo taken on Mt. Popa in 2005.

No voucher specimens exist.

**14. *Luisia macrotis* Rehb.f., Gard. Chron. 1869: 110 (1869).**

*Voucher specimen.* Mt. Popa, *Khin Myo Htwe* 26 (spirit collection–TNS).

*Distribution.* India, Laos, Myanmar, Thailand, Vietnam.

*Note.* *Luisia macrotis* has been recorded from India eastward to Vietnam. It was previously unknown from Myanmar.

We are greatly indebted to the park rangers of Popa Mountain Park for their exhaustive efforts in collecting specimens. Thanks are also due to the following personnel in Myanmar: U Khin Maung Zaw, former director of the Nature and Wildlife Conservation Division; U Saw Eh Dah, former director of the Research and Development Division; U Aung Din, former assistant director of the Nature and Wildlife Division; U Tin Tun, director of the Nature and Wildlife Division; U Kyaw Tin and U Swe Kyaw, U Soe Win Hlaing, former director generals; and, U Aye Myint Maung, director general, Forest Department, Union of Myanmar Ministry of Forestry. Finally, we would like to express our thanks to Dr. Y. Tsujita for her help in collecting.

This research is partly supported by Grant-in-Aid from the Japan Society for the Promotion of Science for Scientific Research (A) to J. Murata (Nos.13375003 & 17255004), to T. Yukawa (21370038), and a Grant-in-Aid from Kochi Prefectural Government.

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*Received September 13, 2010; accepted January 26, 2011*